

**Summary Report of the
First Meeting of the
World Trade Center Technical Review Panel**

Alexander Hamilton U.S. Customs House
New York, New York
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NOTICE

This report was prepared by Eastern Research Group, Inc., an EPA contractor as a general record of discussion held during the first meeting of the World Trade Center Technical Review Panel (March 31, 2004). This report captures the main points and highlights of the meeting. It is not a complete record of all details discussed, nor does it embellish, interpret, or enlarge upon matters that were incomplete or unclear. Statements represent the individual view of each meeting participant, and may or may not represent the analyses or positions of EPA.

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LIST OF ABBREVIATIONS

AHERA	Asbestos Hazard Emergency Response Act
ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control and Prevention
COPC	contaminants of potential concern
CWA	Communications Workers of America
EPA	U.S. Environmental Protection Agency
FDNY	New York City Fire Department
FEMA	Federal Emergency Management Agency
HEPA	high-efficiency particulate air
HVAC	heating, ventilation, and air conditioning
NCEA	National Center for Environmental Assessment
NIEHS	National Institute of Health and Environmental Sciences
NIOSH	National Institute for Occupational Safety and Health
NYCOSH	New York Committee for Occupational Safety and Health
NYCDEP	New York City Department of Environmental Protection
NYU	New York University
ORD	Office of Research and Development
OSHA	Occupational Safety and Health Administration
PBDE	polybrominated diphenyl ether
PCB	polychlorinated biphenyl
SEC	U.S. Securities and Exchange Commission
WTC	World Trade Center

EXECUTIVE SUMMARY

After the collapse of the World Trade Center (WTC) and the subsequent release of contaminants into the environment, the EPA Region 2 office conducted a voluntary cleanup of apartments and some buildings in a limited area surrounding Ground Zero. EPA is preparing for a sampling program whose purpose is to determine whether there has been any recontamination of the apartments cleaned in this program. EPA's Office of the Science Advisor convened an expert technical review panel whose members will help guide the Agency's development of this resampling program and, in the longer term, the Agency's use of the available exposure and health surveillance databases and registries to characterize any remaining exposures and risks, identify unmet public health needs, and recommend any steps to further minimize the risks associated with the WTC collapse. Members of the panel include representatives from the federal agencies directly involved in the air quality response and monitoring, the New York City Departments of Health and Environmental Protection, and outside experts.

The first meeting convening the expert technical review panel occurred on March 31, 2004, at the Alexander Hamilton U.S. Customs House (One Bowling Green Way) in New York City. This meeting was announced in the Federal Register on March 16, 2004, and was open to the public.

The purpose of the first meeting was to:

- Review the proposed mission statement of the panel;
- Review the processes and operating principles for the conduct of the panel;
- Receive public comments; and
- Begin panel discussion relevant to the panel's technical goals.

Paul Gilman, EPA's Science Advisor, opened the meeting with introductory remarks and introduction of the individual panel members. Some members of the panel followed his opening presentation to ask clarifying questions. Then panel members received public comments as part of the morning session. After lunch, EPA Region 2 presented an overview of the Region 2 Indoor Air Residential Assistance Program. Then, EPA's National Center for Environmental Assessment presented the Draft Resampling Protocol. Each presentation was followed by a discussion among panel members. After these presentations and discussions, EPA received public comments again. These comments were ended prematurely because of a ceiling and water pipe failure at the meeting facility. Dr. Gilman closed the meeting from the lobby of the meeting room, apologizing for the inconvenience and encouraging safe exit from the premises. The key comments from each session of the meeting are presented by section below.

Key Points and Action Items from the Discussion on Panel Purpose, Goals, and Roles

- The 2nd meeting will be held April 12, and the 3rd meeting will be held May 24. The location of these meetings will be announced at a later date.
- Members of the panel should think toward the development of an overall agenda for the objectives of the panel, including how to meet health needs of the community and data analysis.

Key Points from the Overview of the Region 2 Indoor Air Residential Assistance Program

- All of the uncompiled, raw sampling data should be provided to the panelists for review, including samples that did not exceed health-based benchmarks.
- Any correlation data between asbestos, the contaminants of potential concern, and other contaminants should be provided to the panelists.

Key Points from the Discussion of the Presentation on the Draft Resampling Protocol

- The resampling effort should be expanded to include wipe samples for settled dust.
- The resampling effort should include wipe samples of the heating, ventilation, and air conditioning systems.
- The resampling effort should include sampling the common areas.
- EPA and the members of the panel need to clarify where they are headed over the next few meetings.
- EPA and panel members need to be cognizant of the concerns specifically identified by Senators Clinton and Lieberman for this panel.

Key Points from Public Comments

- One commenter urged EPA to take full account of the criticism regarding the cleanup, including criticism in the Inspector General's report that indicated that this cleanup meet the specific cleanup standards required under Superfund.
- The extent of WTC contamination and associated risk should be determined and disclosed to ensure an adequate cleanup of contaminated homes and that workers are trained in the precautions needed for such a cleanup.
- Representative tests should be performed to characterize the WTC contamination in concentric circles from ground zero outward.
- Sampling and analysis should include methods that are more sensitive than the more conservative air sampling methods.
- Fine and ultrafine particulates should not be dismissed from risk analysis.
- Landlord disclosure regarding WTC contamination should be considered a requirement to new tenants.

- Potential occupational exposures to WTC toxins should be identified.
- Residents and workers affected by the WTC attack should receive proper health care.
- Detail on how this technical panel was formed should be provided.
- Please explain why neither Dr. Steven Levin or Dr. Robin Herbert, Medical Director and Co-Medical Director of the Mount Sinai Center for Occupational and Environmental Medicine were included on this technical panel. Electron microscopes should be used to determine the extent of WTC contamination, rather than outdated OSHA equipment.
- The perimeter of apartment sampling and cleaning should be expanded.
- Care should be taken to consider non-English-speaking people and low-income people when conducting outreach.
- Health care providers in the Lower East Side should present data to EPA indicating the extent of health effects related to the WTC.
- Air-cleaning equipment should be provided to all people within the zone of contamination.
- Assistance should be provided to all people with health effects from the WTC disaster.
- The health registry should ask if people are getting treatment in order to determine the percentage of people with symptoms who may not be able to afford treatment.
- The effects of the subway system moving and spreading the contamination throughout the city should be studied.
- The distribution and composition of the WTC plume should be determined.
- Explain why Canal Street was set as the northern limit to the extent of the cleanup program area.
- Explain why less than 4,500 people enrolled in EPA's Apartment Cleanup Program.
- EPA should explore options for an alternative, less invasive method of sample collection. For example, EPA could distribute 500 high-efficiency particulate air filtration units and collect the filters after 1 month.
- Explain the science behind this program.
- Explain how panel members were selected.
- Seven of the official panelists should be residents of the affected area.
- All apartments requesting cleanup should be tested.
- The sampling protocol should include reservoir sampling to determine what pollutants were deposited in local water bodies. This will provide information on the extent and concentration of deposited toxics.
- The sampling protocol should include sampling organic films, because many toxic substances adhere to them.
- The sampling protocol should include characterization of the dispersion of fine particulates.
- The sampling protocol should include characterization of the dispersion of polychlorinated biphenyls, dioxins, and polybrominated diphenyl ethers.

- What is the legal and scientific rationale for not including workplaces and other commercial spaces in EPA's testing and cleanup program and when will the EPA include these buildings in the program? While there is clearly the need to look at science and re-evaluate standards and models of exposure, that debate can take years. At what point will the irrefutable fact that thousands of workers and community members are already ill as a direct result of their 9/11-related exposures be considered in this debate and spur the necessary action?
- What will be done differently in the future to make sure that workers and the public are protected from hazardous environmental contamination created as a result of an act of terrorism or other emergency?
- What will be done to protect workers and the public from future, ongoing contamination, such as diesel exhaust, created by what will amount to a 16-acre construction site in lower Manhattan?
- Chemical removal activities should be conducted only by trained professionals.
- The validity of sampling reports sent to residents need to be verified.

1. INTRODUCTION

The collapse of the World Trade Center (WTC) resulted in the incursion of contaminants to the indoor environment, including residences, business offices, stores, and other commercial areas near ground zero. During 2002 and 2003, the EPA Region 2 office conducted a volunteer cleanup of apartments and some buildings in lower Manhattan in the area south of Canal Street. EPA is preparing to begin a second program of apartment sampling whose primary purpose is to determine whether there has been any recontamination of the apartments cleaned in the earlier cleanup program.

EPA's Office of the Science Advisor convened an expert technical review panel whose members will help guide the Agency's development of this resampling program and, in the longer term, the Agency's use of the available exposure and health surveillance databases and registries to characterize any remaining exposures and risks, identify unmet public health needs, and recommend any steps to further minimize the risks associated with the WTC collapse. Members of the panel include representatives from the federal agencies directly involved in the air quality response and monitoring, the New York City Departments of Health and Environmental Protection, and outside experts.

Specifically, EPA's goals for convening this panel and holding the current and planned meetings are:

- To obtain greater input on ongoing efforts to monitor the situation for New York residents and workers impacted by the collapse of the WTC.
- To help guide EPA's use of the available exposure and health surveillance databases and registries to characterize any remaining exposures and risks, identify any unmet public health needs, and recommend any steps to further minimize the risks associated with the aftermath of the WTC attacks.

In discussions with the Council on Environmental Quality and interested parties on Capitol Hill, a set of charge questions was developed for the technical panel. Within 3 to 6 months, the panel is charged with reviewing documents summarizing the following:

- Post-cleaning verification sampling in the residential areas included in EPA's Indoor Air Cleanup program to verify that re-contamination has not occurred from central heating, ventilation, and air conditioning (HVAC) systems; and
- The "World Trade Center Indoor Air Assessment and Selection of Contaminants of Concern and Setting Health-Based Benchmarks," which concluded that asbestos was an appropriate surrogate in determining risk for other contaminants.

An additional, a longer-term goal for the panel is:

- Guide the Agency's use of the available exposure and health surveillance data to characterize remaining exposures and risks, identify unmet public health needs, and recommend any steps to further minimize the risks associated with the WTC collapse.

The first meeting convening the expert technical review panel occurred on March 31, 2004 at the Alexander Hamilton U.S. Custom House (One Bowling Green Way) in New York City. This meeting was announced in the Federal Register on March 16, 2004, and was open to the public. This report is a summary of that meeting.

Information on subsequent meetings will be announced on EPA's website (<http://www.epa.gov/wtc/panel>). Interested people can also get information on these meetings by calling 1-800-803-2833.

1.1 Purpose of the Meeting

The purpose of the first meeting was to:

- Review the proposed mission statement of the panel;
- Review the processes and operating principles for the conduct of the panel;
- Receive public comment; and
- Begin panel discussion relevant to the panel's technical goals.

1.2 Agenda for the Meeting

Registration and check-in for the meeting began at 9 a.m. in the lobby of the Alexander Hamilton U.S. Customs House. Preregistration for observers and commenters was available online at <http://www.epa.gov/wtc/>.

Dr. Paul Gilman, EPA's Science Advisor, opened the meeting by introducing the members of the panel, and he made a presentation summarizing the purpose and goals of these meetings and the panel formation. Following his opening presentation, he addressed clarifying questions from panel members. After this opening presentation and discussion, members of the panel heard comments from the public. The meeting then adjourned for lunch for one hour.

After lunch, Pat Evangelista of EPA Region 2 presented an overview of the Region 2 Indoor Air Residential Assistance Program. Mr. Evangelista reviewed the development of the Indoor Air Residential Assistance Program, reviewed the development of health-based benchmarks for contaminants of potential concern (COPC), reviewed the Confirmation Cleaning Study and its results, and discussed current related activities by EPA Region 2. After this presentation, the members of the panel briefly discussed the issues presented.

Matthew Lorber of EPA's Office of Research and Development (ORD), National Center for Environmental Assessment (NCEA), opened the presentation of the Draft Resampling Protocol. Mr. Lorber discussed the mission of the study, design parameters for consideration, and the proposed sampling design. Then, Dr. Graham Kalton (Westat) discussed statistical concepts relevant to the sampling design, including the principles of selecting a sample size, confidence intervals, and oversampling.

After these presentations and discussions, EPA received public comments again. These comments were ended prematurely because of a water pipe and ceiling failure at the meeting facility. Dr. Gilman closed the meeting from the lobby of the meeting room, apologizing for the inconvenience and encouraging everyone to safely and quickly exit the premises.

The formal agenda distributed for this meeting is contained as Appendix A of this report.

2. INTRODUCTORY REMARKS AND OPENING PRESENTATION

Dr. Paul Gilman, EPA Science Advisor

Dr. Paul Gilman opened the meeting by welcoming the panel members and audience participants. Dr. Gilman noted that the order of public comments was developed based on the date of registration, and commenters who wished to be moved to an earlier time should inform the registration desk. EPA encouraged participants to submit written comments in addition to their verbal comments. Further, Dr. Gilman noted that the number of registered commenters mandated that the meeting adjournment time be set later than the originally planned time of 5:30 p.m. The current estimated time of adjournment was 6:45 p.m. Dr. Gilman encouraged commenters to stay within the prescribed five minutes per commenter in order to promote efficiency and allow as many commenters as possible to participate. Dr. Gilman also noted that some of the panelists had travel arrangements that might cause them to leave before all commenters had spoken.

Dr. Gilman then asked the panelists to introduce themselves, beginning with his own introduction:

Dr. Paul Gilman serves as EPA's Science Advisor and Assistant Administrator for Research and Development. In his career, he has worked in the private sector in the biotechnology field, with the National Academy of Sciences National Research Council, with the Office of Management and Budget, and with the Department of Energy. He also spent thirteen years working in the U.S. Senate for individual members and served as the Staff Director for the Subcommittee on Energy Research and Development. He was formally educated in biology, ecology, and evolutionary biology.

Claudia Thompson, Ph.D., is the Senior Program Administrator for the National Institute of Health and Environmental Sciences (NIEHS) at the National Institutes of Health. Dr. Thompson manages a program investigating health effects resulting from the collapse of the WTC towers, sponsored through funds from Congress. This program is supported by scientists from six universities primarily in the New York and New Jersey area and includes research on exposures and epidemiology related to the WTC collapse. The program also contains a small outreach component.

Dr. Jeanne Mager Stellman directs the General Public Health program and is Deputy Head of the Department of Health Policy and Management at the Mailman School of

Public Health, Columbia University. She has spent most of her career in occupational and environmental health research, training, and public service. Most recently, she completed a major project for the National Academy of Sciences characterizing exposure to herbicides, as well as other health studies.

David Prezant, M.D., is a professor of medicine at the Albert Einstein College of Medicine and serves as the Research Director for the Pulmonary Division. He is also the Deputy Chief Medical Officer and Senior Pulmonary Consultant to the New York City Fire Department (FDNY). The FDNY responded to the World Trade Center disaster and suffered numerous health effects as a result. Dr. Prezant was involved in setting up the first monitoring and treatment program for FDNY firefighters, which is funded by FDNY, NIEHS, the Centers for Disease Control and Prevention (CDC), the Federal Emergency Management Agency (FEMA), and the National Institute for Occupational Safety and Health (NIOSH).

Steven Marcowitz, M.D., is a physician specializing in occupational and environmental medicine and epidemiology. Dr. Marcowitz is currently the Director of the Center for the Biology of Natural Systems and Professor of Natural Sciences at Queens College. The Center posted a mobile unit in early 2002 offering occupational health exams to four hundred day laborers at ground zero. More recently, a workers' clinic was established which is supported through NIOSH for the next five years.

Krish Radhakrishnan is the Director of the Asbestos Control Program with the New York City Department of Environmental Protection (NYCDEP). He has been working with WTC-related issues for the past three years.

Joseph Picciano, P.E., is the Acting Regional Director for FEMA's New York City Office. Mr. Picciano is responsible for all FEMA/Department of Homeland Security programs in the region. For the past two years, he has worked with numerous agencies in response to the WTC disaster, including EPA.

Frederica Perera, Ph.D., is a Professor at Columbia University, where she serves as Director of the Columbia Center for Children's Environmental Health. Her areas of expertise include environmental health sciences and risks to children, molecular epidemiology, and risk assessment. She has participated in many efforts studying the role of environmental exposure on pregnant women, children, and adults. NIEHS, EPA, and other sources fund the Center. Dr. Perera is currently involved in an ongoing study on women who were pregnant on 9/11 that is funded by private sources and NIEHS.

David Newman is an industrial hygienist with the New York Committee for Occupational Safety and Health (NYCOSH). Since 9/11, NYCOSH has worked at ground zero and throughout lower Manhattan assisting workers, unions, employers, and community and tenant organizations. NYCOSH completed a small amount of sampling, and provides technical assistance to the design and evaluation of sampling protocols, as well as other public policy issues related to the WTC disaster.

Patricia Clarke is the OSHA Regional Administrator for Region 1, which encompasses New York, New Jersey, and the Caribbean. As such, she headed the OSHA Region 1 response to the WTC disaster.

Captain Sven Rodenbeck is a commissioned officer for the U.S. Public Health Service, and is stationed at the Agency for Toxic Substances and Disease Registry (ATSDR). Captain Rodenbeck led the ATSDR team that responded to the WTC disaster and, as such, was involved with the efforts of some of the other organizations represented on the panel.

Greg Meeker is a research scientist and manager for the Electron Microbeam Laboratory for the U.S. Geological Survey in Denver, Colorado. His laboratory was asked to conduct infrared airborne imaging after September 11, including the collection of extensive ground sampling to calibrate the system. This work was performed in cooperation with NASA.

Catherine McVay Hughes has been a resident of downtown Manhattan for over 15 years. She works part time with New York University on the WTC Communications Outreach Program, and she received a mini-grant to this program to develop an asthma databank for residents of downtown office workers. Ms. McVay Hughes is also a member of Community Board 1 and a WTC redevelopment committee. Additionally, she runs a website from her home called Asthma Moms that contains a section on the WTC.

Jessica Leighton, Ph.D., M.P.H., is the assistant commissioner for the Bureau of Environmental Disease Prevention at the New York Department of Health and Mental Hygiene. The health department was involved in a wide range of activities after September 11, including some of the initial respiratory protection of workers downtown and some of the initial collection of sampling data. Dr. Leighton coordinated that information, and most recently developed the WTC registry. Additionally, her children attend school in downtown Manhattan.

Paul Lioy, Ph.D., is a professor of Environmental and Community Medicine at the University of Medicine and Dentistry of New Jersey–Robert Wood Johnson Medical School, Piscataway, N.J. He has been involved with WTC issues since September 12, when he was called by the Port Authority to evaluate occupational exposure issues. Dr. Lioy summarized findings from EPA and NIEHS regarding exposure characterization, including the initial dust and smoke released to outdoor and indoor environments in downtown Manhattan. This work was conducted in collaboration with the Mount Sinai School of Medicine and FDNY. His laboratory received funds from EPA and NIEHS to develop a reconstruction of the contamination plume during the period spanning the initial collapse to thirty days after the collapse, for the purpose of establishing an exposure profile of people who live in lower Manhattan.

Morton Lippman, Ph.D., has been on the medical faculty at the New York University (NYU) School of Medicine since 1967. He has prior experience in the Public Health Service and in occupational health research. He heads a research group at NYU, the

Human Exposure and Health Effects program, that collected dust the day after the WTC disaster and set up sampling stations at a downtown hospital on September 14th. Dr. Lippman noted that his hands-on participation supported by NIEHS has been relatively modest: he was involved to some degree with advice and interpretation of analyses using a sequential sampler and ultrasonic particle analysis of downtown samples.

Commander Peter W. Gautier serves as the Commanding Officer of the Coast Guard Gulf Strike Team in Mobile, Alabama. This team is one of three strike teams in the U.S. that work with the EPA to respond to hazardous or serious incidents/crises, including ship groundings and tanker spills. His team is also involved with incidents involving weapons of mass destruction, and was involved in the WTC response with EPA Region 2, offering management expertise on the air sampling and wash-down stations for equipment and workers.

Dr. Gilman thanked the panel and asked panel members if they had any clarifying questions. The panel members had no questions. Dr. Gilman proceeded to his introductory presentation.

2.1 Presentation on the World Trade Center Technical Review Panel

Dr. Gilman explained that the purpose of the technical panel is to:

- Obtain greater input on ongoing efforts to monitor the situation for New York residents and workers impacted by the collapse of the WTC; and
- Help guide EPA's use of the available exposure and health surveillance databases and registries to characterize any remaining exposures and risks, identify any unmet public health needs, identify data gaps in those databases, and develop activities to fill those gaps and minimize risks.

Dr. Gilman noted that EPA will lead and organize the technical panel, with representation from the federal agencies directly involved in the air quality response and monitoring, including:

- New York City Department of Health and Mental Hygiene;
- NYCDEP; and
- Other outside experts.

Dr. Gilman then reviewed the charge to the panel, which is organized into two phases:

Within 3 to 6 months:

- Members of the panel will review the post-cleaning verification sampling in the residential areas included in EPA's Indoor Air Cleanup and verify that recontamination has not occurred from HVAC systems.

- Members of the panel will review the *World Trade Center Residential Confirmation Cleaning Study*, which concluded that asbestos was an appropriate surrogate in determining risk for other contaminants. This will be a principal focus of the second meeting of the panel.

Within 18 to 24 months:

- Members of the panel will identify areas where the health registry could be enhanced to allow better tracking of post-exposure risks by workers and residents;
- Members of the panel will review and synthesize the ongoing work by federal, state, and local governments and private entities to determine the characteristics of the WTC plume and where it was dispersed; and
- Members of the panel will review the geographic extent of monitoring and testing by EPA and other entities, and recommend any additional evaluations for consideration by EPA and other public agencies.

Dr. Gilman closed his presentation by reviewing the operating principles of this technical panel:

- All meetings of the panel will be held in the New York metropolitan area, open to the public (except where the public interest requires otherwise), and announced in advance. The next meeting will be held April 12, and the third meeting will be held May 24. The location of these meetings will be announced at a later date.
- An EPA representative will chair the panel, and a non-government member of the panel will serve as vice-chair. The chair will consult with the vice-chair in the preparation of all panel documents, including meeting agendas and meeting minutes.
- Non-government members of the panel will represent themselves and not their respective institutions.
- Non-government members of the panel will be asked to disclose possible conflicts of interest.
- Panel members will be asked for their individual comments and recommendations regarding the charge. There will be no attempt to reach consensus or to develop group recommendations among panel members, which might otherwise stifle individual opinions.
- The panel members may provide comments and recommendations in writing and verbally at public meetings. They will not make decisions or develop group positions.
- It will be the responsibility of EPA and other appropriate state and local organizations to formulate responses to the individual recommendations.
- *Ex officio* panel members, including the community liaison, will receive all panel materials in advance of meetings, will be able to submit comments and recommendations in writing, and will be able to briefly summarize their comments and recommendations verbally at appropriate times during panel meetings.

- Detailed minutes of each panel meeting will be kept. The minutes will include all individual recommendations, whether submitted verbally or in writing.
- Except where the public interest requires otherwise, panel documents will be made available on the Web (to the extent technically possible) for contemporaneous public inspection.
- A public comment period will be provided during each meeting. The public may also submit written comments that will be considered by the panel members.
- Composition of the panel may change as required for the different phases of the charge.
- EPA will brief interested members of the New York, New Jersey, and Connecticut delegations and responsible Congressional committees every other month or as requested throughout this process.

Dr. Gilman ended his presentation by asking for comments and questions from members of the panel.

2.2 Panel Discussion on the Purpose, Goals, and Roles of Panel Members and Operating Procedures

A panelist recognized the need to follow the prescribed agenda for this meeting, but noted that members of the panel need to discuss some critical items of the charge very soon, such as unmet public health needs and making comments regarding EPA's data analysis. Dr. Gilman agreed with the commenter, noting that the first and second meetings are focused on the resampling protocol and the use of asbestos as a surrogate so that the resampling work may continue sooner rather than later. For the balance of the activities, Dr. Gilman would like to coordinate the development of an agenda with members of the panel to address these potential needs.

The panel co-chair, Paul Liroy, agreed with the panelist. Members of the panel need to ensure that they address the higher purpose of the charge. Dr. Liroy suggested that members of the panel have two immediate goals: the resampling effort and the use of asbestos as a surrogate, and then a parallel effort that will entail consideration of these broader and critical questions. Perhaps these issues may be addressed at the May 24 meeting.

A panelist noted that the pressing need for this panel is to consider and discuss the resampling and asbestos issue. However, the panelist also urged fellow panelists to keep the panel's mission in mind, which is to discuss unmet public healthcare needs. Members of the panel should not turn this effort into an exposition for unsought partners not previously involved in these issues. Rather, members of the panel should first discuss the needs for science, health, and medical confidentiality, and then seek partners.

A panelist asked why the resampling effort does not include apartments that have never been sampled. Dr. Gilman responded that EPA is conducting the resampling effort for the purpose of determining the level of recontamination that may have occurred in apartments that have already been cleaned and sampled. Therefore, only apartments that

were cleaned in the initial cleanup are included in the study. No decision has been made on extending the program to address apartments outside the original study or additional contaminants.

Members of the panel had no additional comments or questions.

3. INDOOR AIR RESIDENTIAL ASSISTANCE PROGRAM AND DISCUSSION

Pat Evangelista, representing EPA Region 2, presented an overview of the Indoor Air Residential Assistance Program undertaken by EPA Region 2 subsequent to the WTC collapse. After he gave his presentation, members of the panel discussed elements of it.

3.1 Overview of the Region 2 Indoor Air Residential Assistance Program Pat Evangelista, EPA Region 2

Mr. Evangelista presented an overview of the Indoor Air Residential Program undertaken by EPA Region 2. The goal of the program was to provide assistance to impacted New York City residents concerned about the environmental and health implications of dust/debris from the WTC collapse and fires on indoor environments.

Mr. Evangelista listed the members of the task force that developed the program, as well as the source of funding for the program. He then briefly described the process undertaken to identify contaminants of potential concern (COPC) and how health-based benchmarks were established. The program was peer-reviewed through the facilitation of an EPA contractor, Toxicology Excellence for Risk Assessment.

Mr. Evangelista described the five parallel efforts that constituted the program:

- 1) Cleaning building exteriors
- 2) Selecting COPC and setting health-based benchmarks
- 3) Confirmation cleaning study
- 4) Background study
- 5) WTC indoor cleanup program

He closed his presentation by noting the current activities for the program, which include closing out the FEMA-funded activities and preparing the final report of the WTC indoor cleanup program.

3.2 Panel Discussion of the Region 2 Indoor Air Residential Assistance Program

A panelist asked Mr. Evangelista how the program evaluated the HVAC systems. Mr. Evangelista responded that the HVAC systems were visually evaluated. No wipe samples were collected from the HVAC systems.

A panelist asked if there were comparable lead data for the cleanup effort downtown and uptown. Mr. Evangelista referred the question to Mark Maddaloni, a toxicologist with EPA. Mr. Maddaloni indicated that they did compare lead samples from these locations, and the uptown samples were lower than those downtown. He noted, however, that Housing and Urban Development data for the Northeast mixed-urban housing category contained consistent levels of lead, suggesting that pre-WTC levels may have already been elevated based on housing type.

A panelist asked if the sampling program included carpet or upholstery sampling. Mr. Evangelista responded that carpet and upholstery sampling was not performed as part of the EPA Cleanup Program he described, but may or may not have been part of the Confirmation Study.

A panelist asked if the sampling program considered the age or type of the buildings in the study. Mr. Evangelista indicated that they did note the type of building in order to consider whether lead paint might be in the building. They reviewed the sampling data in the context of the broad general knowledge of the building they were working with, and with that knowledge, speculated if the building contained lead paint or not.

A panelist noted that the exterior building cleaning program cleared 75 percent of 1,000 buildings using a visual evaluation. The panelist asked for additional detail on what the visual evaluation entails. Mr. Evangelista deferred this question to panelist Krish Radhakrishnan. Mr. Radhakrishnan indicated that the visual evaluation consisted of looking for debris on the exterior of 1,073 buildings. NYCDEP determined through visual inspection that there were 322 buildings with debris, and NYCDEP cleaned about 221 buildings. The remainder of these buildings were cleaned by the owners. NYCDEP verified that the remaining buildings had been cleaned by returning to the site and visually reinspecting the exteriors of the buildings.

The panelist asked if a certain protocol was used by those visually inspecting the buildings or whether this was a more subjective check-off. Mr. Radhakrishnan indicated there was a checklist. Visual inspection was conducted with an inspector from NYCDEP and an inspector from EPA.

A panelist asked if any science or experimental data supported the visual inspection of buildings and HVAC units. Mr. Evangelista deferred to EPA's Ms. Kathleen Callahan in the audience. She indicated that EPA consulted with HVAC consultants to determine if a sampling protocol existed. It was difficult to determine an appropriate sampling protocol to evaluate if the contaminants were attributed to WTC debris and dust in an HVAC system or on a building façade. A visual inspection was ultimately agreed upon through discussions with the HVAC consultants and the WTC task force workgroup.

A panelist asked if the workgroup considered placing a filter on the exhaust from an HVAC unit and then testing the HVAC filter, or testing the HVAC interior using wipe samples within the HVAC unit, based on previous sampling efforts. EPA responded that

there was not a significant body of data to draw from. In the Confirmation Cleaning Study, an HVAC system was connected to the commercial space areas from which wipe samples were collected. Then, the building was cleaned according to the same cleaning techniques used before, and the post-cleaning wipe samples indicated that the cleaning reduced contamination of the sampled contaminants to below health-based risk levels. Lead was the exception to this. Lead was dramatically reduced from pre-cleaning levels, but was still slightly above the health-based risk levels. EPA further clarified that these samples were collected after the HVAC was cleaned.

A panelist asked EPA if there was a goal to differentiate non-WTC dust from WTC dust. EPA indicated that the initial sampling protocol attempted to distinguish between WTC dust and non-WTC dust. Based on advice from the HVAC consultants, such a protocol could not be developed. The panelist further questioned if EPA's approach had been instead to evaluate all dust instead of differentiating between WTC dust and non-WTC dust, in which case they could have more rigorously sampled the HVAC units. EPA responded that if there had been a definite fingerprint of WTC dust, then that would have been the goal. Further, since the pre-WTC dust level in an HVAC has an unknown risk level attached to it, testing all HVAC dust would not have met the goals of the sampling program.

Another panelist asked EPA two questions about the HVAC:

- In the HVAC unit to which you were allowed access, did the sampling team follow a checklist or established protocol? EPA indicated that they had followed a checklist and could provide that to members of the panel.
- If EPA is already spending a fortune to clean buildings, why isn't the HVAC system being included? If we can't test for the fingerprint of the dust, then don't we need to assume the presence of WTC dust if there are WTC-type contaminants in that building? EPA indicated that they thought it was reasonable to make a visual inspection at the time.

A panelist asked for clarification on the number of HVAC systems for which inspections were requested, and the number of HVAC systems actually cleaned. EPA replied that it had responded to requests for testing evaluations of 144 common spaces. Of those 144 common spaces, EPA evaluated 116 HVAC systems and determined that 33 were impacted, based on a visual inspection. Of these 33 systems, 28 were cleaned or partially cleaned. EPA's cleaning assistance was declined for the remaining five.

A panelist pointed out that there is both an input and an output to an HVAC. For example, she noted that her building was evaluated, and the evaluation determined that the input to the HVAC did not require cleaning, but the exhaust required a partial cleaning.

A panelist asked EPA to present the correlations between asbestos and the other pollutants that were measured. EPA indicated that the programs' data will support the assumption of using asbestos as a surrogate, in that when the health-based cleaning

standards were met for asbestos, the health-based standards were met for the remaining COPC.¹ EPA will provide the specific correlation data to members of the panel for review. However, another EPA staff person noted there statistical correlations were difficult because there were so few exceedances for the contaminants (other than lead) found on the wipe samples. He also noted that many of the positive lead samples resulted from lead-based paint. The panelist asked why one would need to include only the exceedances in evaluating the correlations. EPA agreed this was a good suggestion and could return to the data and look at the entire data set.

Another panelist indicated that she was also looking for associations between asbestos and the other COPC. The ATSDR report actually indicated that the absence of asbestos in a sample does not necessarily indicate the absence of manmade vitreous fibers. EPA indicated that perhaps this speaks to the lack of homogeneity in the samples, and does not necessarily negate the assumption that cleaning to the health-based standard for asbestos will also provide reductions in the other COPC to below the health-based standards.

EPA additionally noted that the priority was cleaning the apartments. If EPA were to sample and identify the contaminants and then create a sampling protocol based on those results, they would have expended time that EPA felt it did not have to spare. In the interest of trying to offer a program that prevented exposure, it seemed appropriate to identify a contaminant that had significant long-term effects and base the cleanup on that contaminant. The general approach was to clean first, test for asbestos, re-clean if necessary, and then take a subset of wipe samples to bolster the confidence that health-based standards were met and the cleaning techniques were effective.²

A panelist commented that he noted the lack of homogeneity while reading the report, and noted that no correlations are presented relating asbestos fibers and fine particulate or manmade vitreous fibers. EPA responded that the Agency would check to see if those data are available. A panelist further commented that acute toxicity effects may be correlated to manmade vitreous fiber or fine particulate data; therefore, these data may be critical in reviewing the sampling protocol. EPA agreed to get those data to panel members so that they may review whether they are useful toward meeting that goal.

A panelist noted that members of the panel should further consider and discuss the use of HVAC systems as a potential source of recontamination. The panelist asked for verification that the trigger for residential sampling of HVAC systems was the request of the landlord, and that residents were not in a position to request or obtain evaluations of their HVAC systems without the landlords' consent. EPA verified this was the case.

The panelist further asked for verification that the determination of whether a required HVAC cleaning was based on a visual determination. EPA verified this was correct.

¹ EPA notes that this was true in most cases.

² EPA made a post-meeting note that post-cleaning wipe samples were not collected.

The panelist further asked for verification that when a landlord requested HVAC system evaluation, and the visual inspection determined that cleaning was necessary, no environmental sampling was conducted at that time. EPA verified this was correct.

The panelist asked if there was clearance testing of the HVAC after the HVAC was cleaned. EPA answered that the clearance was based on visual observation only, and no environmental sampling was conducted.

The panelist asked for clarification on the efficacy of the aggressive and modified-aggressive sampling techniques for asbestos. EPA responded that the exceedance rate for aggressive sampling was greater than that for modified-aggressive sampling. Roughly six percent of the apartments that were tested using the aggressive sampling technique were found to exceed health-based standards for asbestos. A panelist asked if EPA ever followed a modified-aggressive sampling technique with an aggressive sampling technique to verify the results of the modified-aggressive technique. EPA indicated that they had not.

A panelist asked what the procedure was for removing contaminated furniture upon resident request, and where the residents stayed while an apartment was aggressively cleaned. EPA indicated that it disposed of unwanted furniture or other porous materials upon request from residents of those apartments involved in the cleanup, and that the American Red Cross assisted residents in finding temporary housing during the cleaning. The panelist further asked what percentage of residents requested this service. EPA was not sure, but said the data are available if needed.

A panelist asked EPA if there is any precedent for an asbestos sampling program to be based solely on a modified-aggressive testing program. EPA answered that the workgroup had developed the health-based benchmark for asbestos based on thirty years of continuous exposure. The benchmark was based on a reasonable expectation of a long-term, reasonable, maximum level of air movement in the room rather than a peak exposure.³ EPA agrees that more data are needed to buttress these assumptions.

A panelist noted that the asbestos concentrations from the sampling are low, even those that exceed the health-based standard. The panelist asked if the urban ambient background levels of asbestos were subtracted from the results. EPA answered that they did not subtract ambient levels from the samples. The panelist also asked if there was any characterization of the fibers collected. EPA answered that yes, they did look at every single fiber and typed the mineralogy of the samples.

A panelist suggested that EPA should consider subtracting the lead background levels from the data to determine how many exceedances remain. Another panelist commented that he understands the scientific basis for subtracting background, but as a physician he

³ EPA made a post-meeting comment that the modified-aggressive testing method was based on the fact that the rigorous air movement typical of the Asbestos Hazard Emergency Response Act (AHERA) program and used in the “aggressive” sampling technique does not appropriately represent conditions of human exposure in a residence.

is concerned that the practice of subtracting out background that may or may not be specifically applicable to that residence may underestimate the actual risk in that residence by not meeting the threshold. After some discussion, some panelists agreed that by using the entire data set (not just exceedances), and considering both results with background and without background, the data may be useful to meet the needs of the study using asbestos as an indicator.

A panelist noted that the COPC are contaminants that will cause future long-term effects (not immediate effects). However, it is evident that people are suffering from immediate effects of exposure to the WTC dust. The panelist asked if it made sense to sample following this same protocol instead of addressing the immediate issue of why people are symptomatic now. A panelist agreed that these contaminants have no immediate effects and would not be the cause of current symptoms. However, the panelist sought comment on the use of asbestos as a surrogate for fiber measurements, which may be causing the acute symptoms.

A panelist clarified for the audience that members of the panel are not dismissing the long-term effects but rather addressing the immediate short-term effects as they relate to the sampling program that members of the panel are charged with addressing.

A panelist asked why only 4,200 residences of those eligible signed up for the program. EPA indicated that it was a strictly voluntary program and that EPA conducted outreach to inform the public of the program. EPA assumed that residences not involved in the program used alternative methods for cleaning. EPA has not followed up to determine the status of those apartments. The cleaning program signup closed in December 2002. The panelist asked how many individuals called to say that they wished they had signed up in time to be included in the study. EPA indicated that ten to twenty individuals have contacted EPA since the close of the signup period.

A panelist asked EPA to clarify the rationale for selecting only residences for cleaning and not businesses as well. EPA assumed that, by focusing on residential properties, they were addressing the largest need, since businesses probably had alternative methods available to them for cleaning, including insurance. No oversight was performed to ensure that businesses were cleaned.

A panelist again inquired about the rights of the tenants to request cleaning. EPA indicated that they had to have access from the property owner to clean buildings. Where a number of tenants expressed interest in the program, EPA tried to assist those tenants in meeting with the building management to grant access to EPA. The panelist suggested that perhaps the panel members could consider other ways that fire laws and risk laws could be applied to ensure that residents are able to access resources for their homes.

A panelist asked whether any studies have been conducted addressing recontamination issues, either in the public or private sectors. EPA did not know of any other studies. Additionally, the panelist asked if anyone has conducted testing on HEPA filtration systems. EPA did not know of any other studies.

4. DRAFT RESAMPLING PROTOCOL PRESENTATION AND DISCUSSION

Matthew Lorber, representing NCEA, presented an overview of the draft Resampling Protocol for the Apartment Cleanup Program. Dr. Graham Kalton, representing Westat, Inc., supplemented this presentation with an overview of the statistical elements of the sampling protocol. These presentations were followed by a panel discussion.

4.1 Presentation on Draft Resampling Protocol

Matthew Lorber, EPA ORD NCEA

Dr. Graham Kalton, Westat

Matthew Lorber opened the presentation by naming the participants of the study development, which includes staff from EPA Region 2, NCEA, and Westat (a private firm). Mr. Lorber reviewed the outline of this presentation, which generally follows the development of the resampling protocol:

- Development of the mission statement;
- Determination of the design implications regarding recontamination and central HVAC;
- Development of the survey design proposal;
- Statement of survey objective;
- Development of survey domains and strata;
- Establishment of proposals for four sample sizes; and
- Post-survey data analysis.

Mr. Lorber discussed the first five items in this outline, and Dr. Graham Kalton followed with a discussion on the statistical considerations for selecting an appropriate sample size. The presentation was completed with a discussion of sampling protocol design issues related to this presentation.

4.2 Panel Discussion of the Draft Resampling Protocol

A panelist asked EPA to explain the justification for limiting the program to apartments previously tested instead of opening it up to all residents. EPA responded that their program was designed in response to the Inspector General's report, which specifically called for an assessment of recontamination issues. The panelist asked if EPA could feasibly sample all apartments requesting sampling, and then just use a subset of those data to complete the reanalysis of the previously sampled apartments. EPA responded that they would need a baseline for the apartments that had not been previously sampled. The panelist clarified that she was suggesting a full general survey of apartments, rather than only a study on recontamination.

Another panelist noted that if new apartments were to be included in the recontamination study, then the cleaning methods used and any sampling that occurred would have to be carefully considered and documented in order to have some basis for a comparison.

A panelist asked EPA to clarify that it intends to use the modified-aggressive sampling method for resampling the apartments. EPA verified this is correct. The panelist suggested that EPA consider using the aggressive sampling technique where it was used previously in order to maintain comparability between samples collected in the initial study and those collected in this resampling effort. EPA responded that they did consider the methods and statistics of post-survey analyses if only modified-aggressive sampling was conducted.⁴ Dr. Kalton continued that a total of 274 apartments were sampled using the aggressive method. EPA would have to analyze that subgroup separately if they were to now offer and then provide aggressive sampling. The currently proposed sampling plan suggests that, for the comparisons between sampling events, EPA would offer residents whose homes had previously been sampled aggressively the opportunity to have a modified-aggressive sample taken, but would leave those modified-aggressive samples out of the final data analysis. Finally, EPA thought it unlikely that people would want to participate in an aggressive sampling program again. The panelist suggested that EPA offer testing to those apartments and leave the decision to the resident, and then perhaps treat those apartments as “over sampled” apartments.

Another panelist noted there might be residents who now want the aggressive sampling method but who previously had requested the modified-aggressive sampling method. While this may not meet the scientific needs of the resampling study, the panelist believes that an additional issue in these studies should be to address the concerns of the residents. The sampling effort needs to keep the concerns of the community in mind. She noted that the concerns of the community brought this panel together more than the science.

A different panelist disagreed with the former panelist, noting that the reason he believes the panel was formed was to use science and measurement to address some of the issues that have been raised. Some members of the panelist further noted that the aggressive sampling effort has no relation to reality when the issue is lifetime exposure and cumulative amount inhaled. The method only has relevance now because it will provide a better statistic, and for that smaller population, the method could produce a few more fibers. A panelist agreed that to maintain comparability, more information could be obtained by comparing results using similar methods.

A panelist noted that members of the panel are supposed to discuss the use of a surrogate measure. The panelist speculated that most people are not interested in the asbestos fibers, but rather whether the cleanup was adequate to deal with the settled dust, which contains the vitreous fibers and particulate matter that may be causing the acute

⁴ EPA made a post-meeting comment that offering aggressive sampling where it was used previously would introduce complexity with regard to the statistical imperative to extrapolate the results from this new sampling effort to the full set of 4,200 sampled apartments in order to compare these results to previous results, and examine the question of recontamination.

symptoms. The panelist expected that if asbestos were to be used as a surrogate, then asbestos samples would be collected in the same medium in which the contaminants of concern are expected to be found (i.e., the settled dust); however, this sampling effort measured asbestos in the air, and therefore, assumes that this measurement is an appropriate surrogate for the contaminants that are in settled dust. If individual members of the panel agree on the use of asbestos as the surrogate, there needs to be some discussion of whether the asbestos being aerosolized using the aggressive and modified aggressive methods can accurately be used as a surrogate for the dust. Usually, a surrogate is measured in the same medium as where the contaminants of concern are expected.

A panelist responded that if the concern is for dry particulate, then asbestos is a viable potential surrogate. It is not a good surrogate for organics that may be absorbed in carpets and couches. However, there may be no other surrogate available for this case.

Another panelist suggested that since EPA will be going back to homes, it would behoove the study to take a wipe sample in the home just before the aggressive or modified aggressive air sampling. Then, if there is contamination, the wipe sample may be analyzed for asbestos, glass fiber, and cement. These are the three dominant elements in the WTC dust. Another panelist agreed with this suggestion.

A panelist raised a concern that the difference between an exceedance and a non-exceedance is a single fiber. The panelist asked EPA to clarify how the validity and reproducibility of that measurement is determined. EPA responded that the National Environmental Investigation Center reviewed the Confirmation Cleaning Study data, and they raised that very issue, noting that if only a small portion of a filter is read, this may or may not be representative of the remainder of the filter given the expected variability of the fiber distribution on the filter. They advised EPA that in order to ensure that a filter measurement is below the health-based benchmark, one must not rely on one reading. In the sampling design, EPA did require multiple readings that are consistently below the benchmark in order to say with confidence that the measurement was below the benchmark. The panelist clarified that EPA took three to five samples per apartment, and if at least one sample exceeded the benchmark then that apartment was labeled as exceeding the benchmark.⁵

A panelist questioned the use of asbestos as the surrogate in both the original sampling effort and the resampling. He also wondered how the data from the wipe samples would be used for comparability, since no wipe samples were collected during the initial sampling, although the collection of wipe sample data would be useful simply to provide more data.

⁵ EPA made a post-meeting note that the asbestos measurement protocol itself has requirements for duplicate analysis. EPA collected three to five samples per apartment, and an apartment was considered “in exceedance” if at least one sample exceeded the benchmark, was overloaded, or the sample was compromised in any way.

EPA responded that it had originally proposed to the peer review panel that they would collect settled dust samples during the initial sampling. However, members of the panel strongly recommended against this because it would be difficult to correlate the contaminants in the settled dust to what might be inhalable.

A panelist continued to note that the trigger for asbestos cleanup is not typically from air sample measurements, but rather from bulk sampling collected as friable, potentially friable, and potentially or theoretically available for suspension in air and therefore inhalation.

Additionally, the panelist asked how the study will account for geographical differences. EPA answered that there was no geographic correlation in the current report, and it would be difficult to attribute a geographic trend to the data. The panelist continued that if the resampling is performed and a building is found to be clean, then no correlations to other geographic regions can be made.

A panelist saw some ambiguity in the treatment of HVAC systems as a potential source of contamination in the report narrative, however, according to the presentation, there is no clear indication of the pathway of contamination in these apartments. It appears the study was designed around HVAC systems but then HVAC systems were not tested. The panelist recommended testing the HVAC systems as part of the resampling. Finally, the panelist noted that the proposal includes sampling the few buildings around ground zero that received special cleanups in 2001. In one of those buildings, the residents disputed the cleanup and hired independent industrial hygienists, who determined that there was visible and measurable asbestos in those apartments. This creates some question as to the validity of the cleanup.

Krish Radhakrishnan responded that, during the initial sampling, the samplers sometimes noted that there was in-place asbestos in the apartments. They cleaned those apartments at that time so there was no dust remaining, however, given that there was in-place asbestos in the apartment, it is possible that there could have been recontamination not due to WTC.

A panelist who is also a lower Manhattan resident stated that she collected dust samples from her HVAC unit using filters and had those filters sampled. There were WTC contaminants in those filters. Additionally, she had a wipe sample collected and the analysis showed that there were 1.5 million structures in that sample. She suggested that it is very important to take wipe samples from the HVAC units.

A panelist asked that the raw data, including the fiber count data, be made available to the panel in spreadsheet format. EPA said they would make sure those data are available.

A panelist asked if the fibers will all be counted. EPA responded that the analysis would be the same as last time. The panelist noted that information could be gained from counting the glass fibers.

Mr. Radhakrishnan asked if the resampling could be expanded to include the common area spaces. EPA noted that the proposed study design already includes adjunct sampling—the sampling at the three buildings on Liberty Street that are not part of the 4,200 apartments universe—and that similarly, EPA could consider additional adjunct sampling, such as common area or HVAC sampling. A panelist commented that the three additions that have been suggested—dust samples, HVAC, and common area sampling—seem reasonable.

Another panelist pointed out that the dust samples cannot be used to make health predictions, as there is no way to take those results and compare them to a health-based benchmark.

A panelist noted there are some competing philosophical issues that may come to the same point. First, EPA and other agencies have come up with risk values, with which individual panel members may agree or disagree. Second, the community is concerned that previous measurements may not have been adequate. And third, EPA needs to measure the same apartments that were cleaned before to determine if recontamination has occurred.

A panelist questioned the testing of HVAC units, noting that the HVAC should be on for sampling to be valid. Another panelist indicated that the modified-aggressive or the aggressive sampling method should resuspend the dust, making the operation of the HVAC irrelevant. Another panelist suggested that HVAC systems are on at all times, but a resident panelist noted this was not the case, as the HVAC in her building was only used for air conditioning and not heating. A panelist noted that dust can settle in corners and right angles of the HVAC system and may not necessarily leave the HVAC when the unit is turned on. Rather, those particles may leave the HVAC when there is some unusual disturbance in the building.

EPA noted that the majority of the previously conducted sampling was performed in an unoccupied building. A panelist commented that the history of the buildings needs to be considered in the sampling effort, including the history of occupancy, the time of the previous sample, and what work that has been performed in the building since its occupancy.

A panelist noted that the assumption that 60 percent of residents asked will agree to participate may be an overestimate, and the proposal should consider the possibility that there will be a lower participation rate. EPA agreed this is a concern, and welcomed panelist comments on a proper sample size. A panelist noted that there was a clear benefit to increasing the sample size and oversampling in order to better understand what is actually happening. This benefit outweighs the disadvantages associated with oversampling. Other panelists agreed with having a large sample size. The panelist asked if there were any cost efficiencies associated with increasing the sample size from 500 to 1,000. EPA responded that the cost per sample is linear, and that no cost efficiencies are experienced at this quantity of sampling. EPA then asked whether asbestos would serve as an appropriate surrogate again, or whether there should be analyses for different

contaminants as well. If asbestos is not the surrogate for this round, then the costs will be different.

EPA noted an additional complication for aggressive sampling: the residents are required to stay out of their apartments for 48 hours. A panelist suggested that EPA should compensate residents for their time out of the apartment to pay for housing and meals for those days. EPA responded that during the initial sampling, the American Red Cross had assisted residents in providing housing, but they can no longer perform that service.

A panelist commented that this resampling effort may experience more overloaded samples than before, because the apartments originally tested had probably all been cleaned prior to sampling. Another panelist agreed this might be a concern.

Dr. Gilman asked the EPA to consider these panel comments in preparation for the next meeting. He then asked members of the panel to comment on the number of apartments that they feel should be sampled given the comments received today. Members of the panel were not ready to make that decision today. A few panelists agreed that a larger sample size is better than a smaller sample size. However, some members of the panel thought that the sample size might be limited by the number of willing participants. Dr. Kalton indicated that the sample design allows for substitution of apartments if residents are unable or unwilling to participate (note: only the locations in the initial sampling program are included for consideration in the sampling program). Dr. Gilman noted that, at the very least, the sampling would include asbestos, but there may be additional sample analyses upon further panel discussion at this and the next meeting.

A panelist noted that community outreach will be very important to explain the program to the community and solicit participants. Some panelists thought that an incentive or compensation should be offered to the participants; however, others disagreed. One panelist suggested that reimbursing participants for their displacement during the sampling might be acceptable.

The panel community liaison noted that the community will probably participate if they feel that the sampling protocol is adequate. However, if they feel that the program is identical to what was done before, they may not be as willing to participate.

Dr. Gilman asked that panel members consider for the next meeting what contaminants should be measured for the resampling. EPA had a contractor assemble asbestos experts and other experts to get their views on this issue and will send their perspectives to prior to the next meeting, scheduled for April 12, 2004.

It was recommended members of the panel discuss at the next meeting:

- Where the panel is headed over the next few meetings.
- Other ways funds might have been allocated, rather than the proposed resampling effort.

- Address the concerns specifically identified by Senators Clinton and Lieberman for this panel.

5. PUBLIC COMMENTS

EPA solicited public comments to speak to issues related to the formation and goals of the technical expert panel, EPA's indoor air sampling program, and EPA's proposed resampling design. EPA received 11 comments in the morning comment session, and 2 comments in the afternoon session. A total of 38 commenters were registered to speak over the course of the day, but the water pipe failure in the meeting room necessitated the early adjournment of the meeting. All of the public comments submitted in writing are contained in Appendix B to this report.

5.1 Kimberly Flynn

Kimberly Flynn is a spokesperson for 9/11 Environmental Action, an organization for residents and school parents affected by the attacks of September 11, 2001. Ms. Flynn's complete written comments are contained in Appendix B of this report.

Ms. Flynn began her presentation noting that the attacks of 9/11 released a massive amount of toxic dust into the atmosphere and into buildings still standing. According to a 1998 Presidential Decision Directive, the EPA has the leadership role to clean up hazardous sites resulting from a terrorist attack. Ms. Flynn noted that the EPA has yet to carry out proper cleanup measures to protect the public's health and safety by addressing the contamination of buildings surrounding the site.

Ms. Flynn recognized the positive step of establishing of this panel, and emphasized that the federal government must not delay in cleaning up the toxic residue that still presents an exposure risk to residents, workers, and school children. Additionally, Ms. Flynn urged that EPA must take full account of the criticism regarding the cleanup—including criticism in the Inspector General's report, which indicated that this cleanup did not meet the specific cleanup standards required under Superfund. EPA's professional cleanup program was flawed in many ways. For example, EPA issued publicity fliers downplaying the risks of the dust and indoor air. Residents have indicated that the perimeter of EPA's air sampling program contained arbitrary boundaries, thereby excluding many residences in need. Additionally, the program specifically excluded non-residential locations.

It has been 2 1/2 years, and the federal government has still not determined the extent of contamination, disclosed the extent of the risk, ensured an adequate cleanup of contaminated homes, or ensured that workers are trained in the precautions needed in such a cleanup. To date, EPA's actions have been taken without public oversight and without consideration of citizen input. Seventy-two percent of downtown residents no longer trust the EPA. There should be no further delay in addressing this distrust and the need for immediate cleanup. The federal government needs to act now to clean up the toxic residue, resample, and increase confidence to the public.

5.2 Jenna Orkin

Jenna Orkin is a spokesperson for 9/11 Environmental Action, an organization for residents and school parents affected by the attacks of September 11, 2001. Ms. Orkin's complete written comments are contained in Appendix C of this report.

EPA must characterize the WTC site. Ms. Orkin suggested that EPA needs to perform representative tests in concentric circles from ground zero outward.

Ms. Orkin said that October 2002 testing of her apartment showed that asbestos was in her carpet at a level of concern. Ms. Orkin had abatement performed. The apartment passed the AHERA test, but several additional tests indicated that asbestos was present at 5 to 10 times the levels EPA set for the WTC cleanup, which was 100 times the level set for most Superfund cleanup sites.

The World Trade Center site is in a highly populated area, and created a highly heterogeneous contamination field. Therefore, EPA's sampling and analysis should reflect this. Specifically, it should include methods that are more sensitive than the more conservative air sampling methods. EPA should not rely solely on the AHERA test because it has been shown to be less sensitive than other test methods. Further, EPA should not dismiss fine and ultra fine particulate from its risk analysis.

5.3 Kelly Colangelo

Kelly Colangelo, a resident of Lower Manhattan, had an apartment less than two blocks from the WTC site. She was allowed to reenter her apartment on September 12, and began developing symptoms, including a rash, headaches, sinus problems, and a deep cough. Ms. Colangelo hired a firm to clean her apartment, but they were not trained in asbestos abatement nor did they wear personal protective equipment. After the cleaning, Ms. Colangelo's symptoms persisted. She used cheesecloth as filters on her HVAC system, since those units were never cleaned and clean filters were on backorder. Further, Ms. Colangelo had samples of debris that entered her apartment after she opened the windows. A January 2002 analysis of these samples indicated that they contained fibrous glass at 30 percent volume, calcite at 25 percent, and gypsum at 20 percent, as well as asbestos levels at 1.4 and 2.0 percent. She moved to midtown New York in 2002, and her symptoms were partially, but not completely, relieved.

Ms. Colangelo has since moved back to lower Manhattan, moving into an apartment in Battery City. She registered this apartment for the EPA Cleanup Program. After she observed the sampling cleaning team responsible for her apartment, she ascertained they did not follow EPA published protocols. She contacted the EPA Quadrant B Coordinator and never received a reply.

Ms. Colangelo has developed several new allergies and a mild case of asthma. She sent a follow up letter to the EPA Quadrant B Coordinator and to Senator Nadler's office, and

received a written and a verbal reply indicating inconsistent protocols from the published protocols and little guidance on her questions regarding the disposal of furniture.

Ms. Colangelo closed her comments noting that she still has symptoms dating back to her return to her apartment on September 12, and she wonders if the new tenants are aware of the damage sustained in the 9/11 attacks. She asked that EPA consider requiring landlord disclosure to new tenants about contamination received as a result of the World Trade Center attacks.

5.4 Suzanne Mattei

Suzanne Mattei is part of the U.S. City Executive for the National Field Office in New York. Ms. Mattei first called for the remembrance of those people who died on September 11 and offered condolences to the affected families.

Ms. Mattei called for the care and protection of those who live and work near the WTC site, including the identification of potential exposures and assurance of proper health care for those affected by pollution from the attack. She called for the government to act in a more responsible way.

Ms. Mattei asked that this administration not close its ears to the needs of those who were affected by this attack, or to the need for disclosing the truth about the risks associated with ground zero pollution. Citizens need to be able to rely on their government to tell the truth about safety matters during times of crisis.

After the Inspector General's report found fault with EPA's response to the WTC, the federal government should not have failed to revise the statements that were disputed in that report. Most workers at the WTC site were never informed of the proper personal protection equipment required for the cleanup.

The panelists should keep in mind that 2,770 children under age 10 were living in a residential area that was heavily affected by the WTC disaster. Children have two routes of exposure, including inhalation and ingestion. The panel needs to remember that the risk assessments should include families as well as workers near and at the WTC site. These workers include recovery workers that worked within the cloud. She urged that the process be moved forward to test and monitor these workers.

5.5 Rachel Lidov

Rachel Lidov was a cofounder of 9/11 Environmental Action. Her written comments are contained in Appendix C.

Ms. Lidov's daughter attends Stuyvesant High School and was informed by sources other than EPA that people were being allowed to return to school before it was safe to do so. 9/11 Environmental Action has heard from increasing numbers of people about their suffering from the toxic exposures released on September 11. Ms. Lidov expressed that

she is stunned by the devastation caused by EPA's negligence. She asked EPA and the panel to provide detail on some specific issues:

- How was this technical panel formed?
- Why were neither Dr. Steven Levin nor Dr. Robin Herbert, Medical Director and Co-Medical Director of the Mount Sinai Center for Occupational and Environmental Medicine included on this technical panel?

The first step to uncovering the truth, she said, is to answer these questions.

5.6 Robert Gulack

Mr. Gulack is a senior attorney at the United States Securities and Exchange Commission (SEC) and, as a public commenter, was representing the National Treasury Employees Union Chapter 293, which represents the bargaining unit at the SEC. His written comments are provided in Appendix C.

Mr. Gulack sustained permanent lung damage as a result of WTC contamination. He maintained that EPA must be immediately called upon to follow the recommendations of its own Inspector General, including testing office buildings.

The SEC offices were destroyed in the attack. Replacement offices were opened one block away from the WTC site at the Woolworth Building. Mr. Gulack and other SEC employees were told that EPA said the air was safe and they would not suffer any long-term lung damage. However, this has not been the case. SEC tested the building exterior in November 2001 and discovered risky levels of asbestos. The building was not cleaned until September 2003.

SEC testing also discovered asbestos in the elevators and stairwells and in an air intake room, elevator, and elevator lobby at levels approaching or exceeding EPA standards. EPA must test all office buildings in lower Manhattan as soon as possible.

Additionally, Mr. Gulack stated that OSHA's equipment is out of date and unable to visualize 90 percent of the highly pulverized WTC asbestos. Mr. Gulack called for the EPA to use electron microscopes to determine the extent of contamination, rather than the outdated OSHA equipment.

5.7 Barbara Caporale

Barbara Caporale is a member of Rebuild Spotlight On the Poor, a community group that came together after September 11 to ensure that the cleanup effort incorporated economic, social, and environmental justice considerations and that funds were sent to New York City to assist in this recovery. Ms. Caporale indicated she was speaking as a parent and a resident, and on behalf of all living victims of September 11.

Ms. Caporale indicated that people believed in the EPA as a champion of the cause of the future of man and his interactions with nature on this planet. When EPA declared the air safe to breathe, the citizens of New York were witnessing the symptoms. One of the tragic losses of 9/11 was the death of the citizen's trust of the federal government in protecting environmental health.

Ms. Caporale further noted that her apartment is on the Lower East Side, outside the perimeter established by EPA for testing. However, Ms. Caporale stated she could not breathe in her apartment during the 100 days the fires burned. Air cleaning equipment was not available to apartments in this area for free, and Ms. Caporale did not know of any other way to obtain the proper equipment recommended by EPA.

Finally, Ms. Caporale cited a 2002 New York Academy of Medicine report released one year after September 11 conducted on day cares below 14th Street in Manhattan, which Ms. Caporale's child attends. The report indicates that the average incidence of asthma in children is 7 percent, while the average rate for children in Manhattan is 40 percent, with the largest percentage of children being diagnosed since September 11, 2001.

Ms. Caporale made the following recommendations to the panel and EPA:

- Expand the perimeter of apartment sampling and cleaning.
- Take care to consider non-English-speaking people and low-income people in your outreach.
- Health care providers in the Lower East Side should present data to EPA indicating the extent of health effects related to the WTC.
- EPA should provide air-cleaning equipment to all people within the contamination zone.
- EPA should provide assistance to all people with health effects from the WTC disaster.
- The health registry should ask if people are getting treatment in order to determine the percentage of people with symptoms that may not be able to afford treatment.
- EPA should study the effects of the subway system moving and spreading the contamination throughout the city.

Ms. Caporale closed her comments noting that the federal government needs to pay closer attention to protect the health of its citizens, and citizens need to regain their trust.

5.8 Diane Dreyfus

Diane Dreyfus represents a neighborhood association and 9/11 Health Alert, an organization that was formed to address EPA's lack of outreach and errors in addressing the WTC health issues.

Ms. Dreyfus began her presentation recalling when the head of EPA declared that it was safe to breathe in lower Manhattan. No air quality alert was sounded to force anyone to

evacuate, however, Ms. Dreyfus notes that after the attack, people covered in dust staggered through her neighborhood until well after dark, followed by rats covered in WTC dust.

While EPA declared that citizens needed to move on with healing and grieving, women began miscarrying their children and delivering low birth weight babies. One of Ms. Dreyfus' friends delivered stillborn in January 2002. Children were requiring inhalers and better cough syrup to control their symptoms after WTC.

Through the second year, cleanup followed and people began seeking medical help. Through the third year, people developed chronic bronchitis and pneumonia.

This experience tells us something about the deficiencies in environmental science. The citizens need EPA's help, however, in evaluating these deficiencies and in finding solutions.

Ms. Dreyfus recommended the following action items:

- Determine the distribution and composition of the WTC plume.
- Explain why Canal Street was set as the northern limit of the disaster area.
- Determine why less than 4,500 people enrolled in EPA's Apartment Cleanup Program.
- Explore options for a less invasive and alternative method of sample collection. For example, EPA could distribute 500 HEPA filtration units and collect the filters after 1 month.
- Explain the science behind this program.
- Explain how panel members were selected.
- Seven of the official panelists should be residents of the affected area.

5.9 Heather Swagart

Heather Swagart spoke for her friend, Indira Singh, who could not be present because she was ordered to leave her apartment immediately since that environment was restimulating her WTC symptoms. Ms. Swagart read a statement prepared by Ms. Singh, which is provided in Appendix C to this report.

Indira Singh is an EMT and lives in an apartment 700 yards south-southeast of the WTC site. On 9/11, Ms. Singh responded to the WTC as an EMT. She proceeded to work there for one week. After one week, she began to present cardiac symptoms, asthma, coughing, swollen glands, eye infections, sores and lesions on her back and neck, and low energy. Other people she knows that did not respond to the WTC site had similar and additional symptoms.

Two months after the attack, Ms. Singh looked at joining a program at Mount Sinai and found that the capacity of the study, 200 people, had been reached. To survive in Lower Manhattan, Ms. Singh spent one week out of the city for every three weeks in the city.

Whenever she left Lower Manhattan, her symptoms subsided; they returned upon her return to the city.

Ms. Singh's apartment was cleaned in late 2002. However, soot and ash remained in the apartment and retriggered WTC symptoms. In late 2003, Ms. Singh entered a medically supervised detoxification program, which dramatically relieved her symptoms.

Ms. Singh closed her remarks with the recommendation that EPA test all apartments requesting cleanup.

5.10 Paul Bartlett

Paul Bartlett's work generally concerns dispersion of toxics, trace contaminants, and monitoring, measuring, sampling, and modeling of regional and long distance transport of contaminants. He lives in Manhattan and was confronted with WTC dust. There are many protocols in his professional field, and many of his colleagues conduct dispersion analysis using United Nations protocols. This science is not yet as developed in the U.S.

Mr. Bartlett's initial reaction was to inform people that the EPA and CDC would do a very good job monitoring dispersion of these toxics. Mr. Bartlett does not understand why the sampling protocols were so flawed, with shortcomings including:

- Infrequent sampling;
- Bad detection limits; and
- Often, use of the worst analytical methods available.

Perhaps this is because the sampling and monitoring was approached from a regulatory rather than a scientific or medical standpoint. There are some good analyses, most of which were conducted by universities.

Unfortunately, there are no comprehensive systematic analyses characterizing what toxics were dispersed in the WTC fallout. The dispersion of these toxics was very heterogeneous. The U.S. Geological Survey performed a very good analysis on the dispersion cloud showing asbestos in a high concentration in one area and then a very low concentration a short distance away. This demonstrates that a highly comprehensive sample design is needed to adequately characterize dispersion of the WTC pollutants. This has not been done and needs to be done.

Mr. Bartlett provided specific examples of flawed sampling and analysis in the WTC program:

- Air particulate monitors are typically equipped with filters that may later be removed and analyzed to determine the composition of particulates. This was not performed in this sampling program.
- There is good analysis of outdoor settled dust. This analysis concluded that there were few fine particulates in the settled dust. However, fine particulate is not

subject to gravitational settling, and would not necessarily be contained in a settled dust sample. There are no analyses of the distribution of extremely fine particulates, and very fine particulates have a very high penetration rate into the indoors. These particulates are more likely to settle indoors where there are stagnant air spaces like closets, behind kitchen appliances, and in other contained areas. Carpets and other porous surfaces also collect fine particulates very well.

- The toxicity of dioxin is known, as is the toxicity of polychlorinated biphenyls (PCBs) and their congeners. These were not measured.
- The greatest release of PCBs should have occurred when the fires were burning at the substation for WTC 7. The date and time of those fires is necessary to model the dispersion of this greatest release of PCBs, but we don't know when those fires occurred. Estimates were made, but the precise distribution of that plume is unknown.
- Polybrominated diphenyl ethers (PBDEs) are commonly used as flame retardants in equipment and building materials in office buildings, and these chemicals are known to have an associated risk. There are very few measurements of these compounds or of the dioxin byproducts they are expected to release upon burning.

Mr. Bartlett made the following recommendations for improving the sampling design:

- Sample the reservoirs to determine what pollutants deposited in local water bodies. This will provide information on the extent and concentration of deposited toxics.
- Sample organic films, because many toxic substances adhere to them.
- Characterize the dispersion of fine particulates.
- Characterize the dispersion of PCBs, dioxins, and PBDEs.

5.11 Micki Siegel de Hernández

Micki Siegel de Hernández is the Director of the Health and Safety Program for the Communications Workers of America (CWA), District One. Ms. Siegel de Hernández expressed concern for the health of CWA members from exposure to indoor and outdoor contamination from the WTC disaster. Ms. Siegel de Hernández's written comments are contained in Appendix C to this report.

Ms. Siegel de Hernández defined the thousands of workers represented by CWA, including administrative, telecommunications, and news press workers, as well as nurses and traffic enforcement agents. The CWA District One offices are located in Lower Manhattan.

Ms. Siegel de Hernández noted that CWA members are displaying serious 9/11-related illnesses. Many employers based their personal protection equipment decisions on EPA's declaration of safe breathing air. The preliminary report from the WTC Worker and Volunteer Medical Screening Program released in January 2003 confirmed that CWA

workers are experiencing 9/11-related symptoms. EPA has yet to test or clean the offices of downtown workers.

Ms. Siegel de Hernández presented the following questions to the EPA Expert Technical Panel:

- What is the legal and scientific rationale for not including workplaces and other commercial spaces in EPA's testing and cleanup program and when will the EPA include these buildings in the program?
- While there is a clear need to look at science and re-evaluate standards and models of exposure, that debate can take years. At what point will the irrefutable fact that thousands of workers and community members are already ill as a direct result of their 9/11-related exposures be considered in this debate and spur the necessary action?
- What will EPA do differently in the future to make sure that workers and the public are protected from hazardous environmental contamination created as a result of an act of terrorism or other emergency?
- What will the EPA be doing to protect workers and the public from future ongoing contamination, such as diesel exhaust, created by what will amount to a 16-acre construction site in lower Manhattan?

5.12 David Stanke

David Stanke is a resident of 114 Liberty Street, one of the buildings in the study. He spoke in order to clarify some of the questions asked earlier about his building. Mr. Stanke gave a brief history of the building.

His building is part of the original EPA/NYCDEP building. His was the last building on the block to be cleaned, because the building had sustained damage on September 11, and a hole in the building needed to be fixed so the building could be sealed prior to sampling. His understanding was that the sampling performed in the building was more extensive than normal. NYCDEP removed all the HVAC equipment, the ceilings, and 50 percent of the drywall in the 11-story building. These spaces were cleaned, a process Mr. Stanke estimated took 3 weeks. After the cleaning, residents pulled up the floorboards and found asbestos under them. The residents hired experts to perform aggressive testing under the floorboards and other places where there was dust. This testing found asbestos.

Mr. Stanke noted that the NYCDEP had also identified a couple of places on the floorboards where there had been asbestos insulation. After the NYCDEP cleaning, the residents removed all exposed asbestos they could see and then sprayed the surfaces down with a sealer, leaving as much of the structure intact and sealed as possible, rather than gutting the building.

A panelist asked Mr. Stanke to clarify that his building hired another contractor to come in and clean after EPA had cleaned the building. He responded affirmatively, and clarified that, in the beginning of the study, they were testing for many compounds, but

later they used only asbestos as the marker for contamination. Their testing included both wipe sampling and aggressive air sampling, and found violations on 3 of the 11 floors. They did find asbestos tiles under the floors, however, the analysis was able to distinguish between the WTC and tile dust.

A panelist asked if NYCDEP actually removed and replaced the ventilation ductwork. Mr. Stanke clarified that NYCDEP removed the ductwork and disposed of it, and the building replaced it after the second cleaning.

A panelist summarized that the integrity of the building had been compromised, and as such, the floorboards were able to expand and contract, opening pathways for WTC dust. Mr. Stanke agreed and further clarified that this building has an open-air plenum system, and therefore the WTC dust was directly blown into the building through the plenum. The panelist had no further questions.

5.13 Harriet Grimm

Harriet Grimm is a resident at 310 Greenwich Street. Ms. Grimm escaped from WTC 5 and her partner and child from the Trinity Preschool. They returned to their apartment 10 days later and found the building enshrouded in dust. They cleaned their apartment using wet wipes. Ms. Grimm stated that their apartment was not only contaminated on September 11, but also over the next year as recovery and cleanup operations continued.

They followed recommendations for cleaning the interior, installed HEPA filters, removed all removable dust, and discarded towels, shades, and curtains. They waited 6 months to have the carpet outside their apartment removed and 19 months for the EPA contractors to clean their apartment.

Ms. Grimm noted she is speaking today to underscore the inadequacies of the post 9/11 cleanup. The common areas and hallways were contaminated with dust due to 9/11 and the dust brought in from the outside in the months following. They met with EPA about the removal of the carpet in the hallways. They were assured that proper protocols would be followed regarding notification of the removal, alternate housing during cleanups, and contained removal of the carpet. On January 20, 2003, EPA began removal of the carpet in the hallway without any notification. The contractor performing the work was named Trio, working under the supervision of a company called ATC. Ms. Grimm asked them to stop the vacuuming process so her 5-year-old and partner, who has a pulmonary condition, could leave the premises. The contractors did not stop, and the supervisors were rude if not hostile. Ms. Grimm called the EPA hotline and was connected to a voice mail. Three days later, she received an apology from EPA. She finally spoke to ATC and was able to get the work stopped for 5 minutes while she taped her door shut. Her neighbors expressed concern that they also were not afforded the opportunity to prepare for the carpet removal.

The workers were dressed in street clothes and wore no dust masks, although a few wore painter masks. One supervisor told a cleaner, “Don’t go crazy” which Ms. Grimm took to

mean “Don’t work too hard on the dusting.” She later learned that the removal process ended on her floor because they ran out of brown paper to place on the floor after carpet removal. Later that afternoon, Ms. Grimm saw that someone had posted the removal schedule in the lobby for the remainder of the floors.

Some of the same workers returned two months later to clean Ms. Grimm’s apartment. Again, they wore no protective equipment.

Ms. Grimm is concerned that EPA’s comments, such as “The air is safe,” encouraged a lack of worker protection, a lack of understanding of the seriousness of the cleanup process, and a carelessness about the health of the downtown residents and workers.

Ms. Grimm called for testing of interior spaces in a statistically representative way so that residents can live and work in spaces free of hazardous contaminants.

5.14 Lissette Velez

Lissette Velez is the parent of a child who was at Stuyvesant at the time of 9/11. She is a participant on the executive board. Ms. Velez said she feels deceived. Parents were told it was safe to go back to school and were given no other alternatives. Her son was critically ill while at Stuyvesant, including an asthma condition that was under control. After 9/11, his condition worsened and he began having asthma attacks again, a dry cough, and blood draining from his nose. He was one of 15 Stuyvesant students who applied to and were accepted at Stanford University. Ms. Velez believes these students left because they no longer feel safe in the local area. Ms. Velez was told that the school was cleaned, but she believes the cleaning was inadequate, as evidenced by children that continued to present symptoms. Ms. Velez brought her son to an environmental specialist at Mount Sinai, who surveyed her son’s symptoms instead of offering treatment. These issues need to be addressed.

5.15 Gosia Staffile

Gosia Staffile introduced herself as a downtown resident and a victim of 9/11. Ms. Staffile became very ill after 9/11 with headaches, pains, and sinus disease. She is on medications. She waited two years for EPA to clean her apartment, and had to beg the Red Cross to house her during the cleaning. The cleanup staff consisted of two girls who were not prepared for removing chemicals and didn’t speak English. They damaged a marble table in her apartment by standing on it, at which point they left the premises. She was uncertain if they had legal papers.

Ms. Staffile stated that it seems reasonable to make sure that professional people are sent in for chemical removal activities. Further, Ms. Staffile was disturbed that a report she received describing the results of cleaning and sampling her apartment was dated March 20, while her apartment was not cleaned until April 12.

Ms. Staffile closed her remarks by asking for answers about the cleanup activities, about the reporting, and finally, about whether her apartment is safe. She cannot work because she is ill, and is now facing losing her apartment of 25 years because the building was bought out.

5.16 Robin Forst

Ms. Forst's comments were interrupted at the start because of a water pipe break in the meeting room. The meeting did not resume after this point.